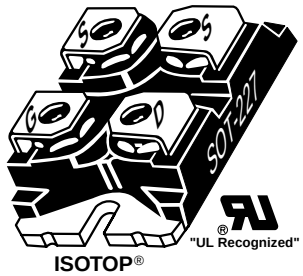
查询APT10025JLC供应商

# APT10025JLC

**1000V 34A 0.250Ω**

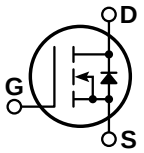
## POWER MOS VI™

Power MOS VI™ is a new generation of low gate charge, high voltage N-Channel enhancement mode power MOSFETs. Lower gate charge is achieved by optimizing the manufacturing process to minimize $C_{iss}$ and $C_{rss}$. Lower gate charge coupled with Power MOS VI™ optimized gate layout, delivers exceptionally fast switching speeds.



ISOTOP®

- **Lower Gate Charge**
- **Faster Switching**
- **100% Avalanche Tested**
- **Lower Input Capacitance**
- **Easier To Drive**
- **Popular SOT-227 Package**




**MAXIMUM RATINGS** All Ratings: $T_C$ = 25°C unless otherwise specified.

| Symbol | Parameter | APT10025JLC | UNIT |
|---|---|---|---|
| $V_{DSS}$ | Drain-Source Voltage | 1000 | Volts |
| $I_D$ | Continuous Drain Current @ $T_C$ = 25°C | 34 | Amps |
| $I_{DM}$ | Pulsed Drain Current ① | 136 | |
| $V_{GS}$ | Gate-Source Voltage Continuous | ±30 | Volts |
| $V_{GSM}$ | Gate-Source Voltage Transient | ±40 | |
| $P_D$ | Total Power Dissipation @ $T_C$ = 25°C | 700 | Watts |
| | Linear Derating Factor | 5.6 | W/°C |
| $T_J$,$T_{STG}$ | Operating and Storage Junction Temperature Range | -55 to 150 | °C |
| $T_L$ | Lead Temperature: 0.063" from Case for 10 Sec. | 300 | |
| $I_{AR}$ | Avalanche Current ① (Repetitive and Non-Repetitive) | 34 | Amps |
| $E_{AR}$ | Repetitive Avalanche Energy ① | 50 | mJ |
| $E_{AS}$ | Single Pulse Avalanche Energy ④ | 3600 | |

ADVANCED TECHNICAL INFORMATION

**STATIC ELECTRICAL CHARACTERISTICS**

| Symbol | Characteristic / Test Conditions | MIN | TYP | MAX | UNIT |
|---|---|---|---|---|---|
| $BV_{DSS}$ | Drain-Source Breakdown Voltage ($V_{GS}$ = 0V, $I_D$ = 250µA) | 1000 | | | Volts |
| $I_{D(on)}$ | On State Drain Current ② ($V_{DS}$ > $I_{D(on)}$ x $R_{DS(on)}$ Max, $V_{GS}$ = 10V) | 34 | | | Amps |
| $R_{DS(on)}$ | Drain-Source On-State Resistance ② ($V_{GS}$ = 10V, 0.5 $I_{D[Cont.]}$) | | | 0.250 | Ohms |
| $I_{DSS}$ | Zero Gate Voltage Drain Current ($V_{DS}$ = $V_{DSS}$, $V_{GS}$ = 0V) | | | 100 | µA |
| | Zero Gate Voltage Drain Current ($V_{DS}$ = 0.8 $V_{DSS}$, $V_{GS}$ = 0V, $T_C$ = 125°C) | | | 500 | |
| $I_{GSS}$ | Gate-Source Leakage Current ($V_{GS}$ = ±30V, $V_{DS}$ = 0V) | | | ±100 | nA |
| $V_{GS(th)}$ | Gate Threshold Voltage ($V_{DS}$ = $V_{GS}$, $I_D$ = 5mA) | 3 | | 5 | Volts |

**CAUTION:** These Devices are Sensitive to Electrostatic Discharge. Proper Handling Procedures Should Be Followed.

*APT Website - http://www.advancedpower.com*

**USA** 405 S.W. Columbia Street Bend, Oregon 97702-1035 Phone: (541) 382-8028 FAX: (541) 388-0364

**EUROPE** Chemin de Magret F-33700 Merignac - France Phone: (33) 5 57 92 15 15 FAX: (33) 5 56 47 97 61

050-5939 Rev - 12-99

## DYNAMIC CHARACTERISTICS

**APT10025JLC**

| Symbol | Characteristic | Test Conditions | MIN | TYP | MAX | UNIT |
|---|---|---|---|---|---|---|
| $C_{iss}$ | Input Capacitance | $V_{GS}$ = 0V<br>$V_{DS}$ = 25V<br>f = 1 MHz | | 11360 | | pF |
| $C_{oss}$ | Output Capacitance | | | 1370 | | |
| $C_{rss}$ | Reverse Transfer Capacitance | | | 460 | | |
| $Q_g$ | Total Gate Charge ③ | $V_{GS}$ = 10V<br>$V_{DD}$ = 0.5 $V_{DSS}$<br>$I_D$ = $I_{D[Cont.]}$ @ 25°C | | 330 | | nC |
| $Q_{gs}$ | Gate-Source Charge | | | 53 | | |
| $Q_{gd}$ | Gate-Drain ("Miller") Charge | | | 144 | | |
| $t_{d(on)}$ | Turn-on Delay Time | $V_{GS}$ = 15V<br>$V_{DD}$ = 0.5 $V_{DSS}$<br>$I_D$ = $I_{D[Cont.]}$ @ 25°C<br>$R_G$ = 0.6Ω | | 25 | | ns |
| $t_r$ | Rise Time | | | 20 | | |
| $t_{d(off)}$ | Turn-off Delay Time | | | 71 | | |
| $t_f$ | Fall Time | | | 10 | | |

ADVANCED TECHNICAL INFORMATION

## SOURCE-DRAIN DIODE RATINGS AND CHARACTERISTICS

| Symbol | Characteristic / Test Conditions | MIN | TYP | MAX | UNIT |
|---|---|---|---|---|---|
| $I_S$ | Continuous Source Current (Body Diode) | | | 34 | Amps |
| $I_{SM}$ | Pulsed Source Current ① (Body Diode) | | | 136 | |
| $V_{SD}$ | Diode Forward Voltage ② ($V_{GS}$ = 0V, $I_S$ = -$I_{D[Cont.]}$) | | | 1.3 | Volts |
| $t_{rr}$ | Reverse Recovery Time ($I_S$ = -$I_{D[Cont.]}$, $dI_S/dt$ = 100A/µs) | | 1300 | | ns |
| $Q_{rr}$ | Reverse Recovery Charge ($I_S$ = -$I_{D[Cont.]}$, $dI_S/dt$ = 100A/µs) | | 38.0 | | µC |

## THERMAL CHARACTERISTICS

| Symbol | Characteristic | MIN | TYP | MAX | UNIT |
|---|---|---|---|---|---|
| $R_{\theta JC}$ | Junction to Case | | | 0.18 | °C/W |
| $R_{\theta JA}$ | Junction to Ambient | | | 40 | |

① Repetitive Rating: Pulse width limited by maximum junction temperature.

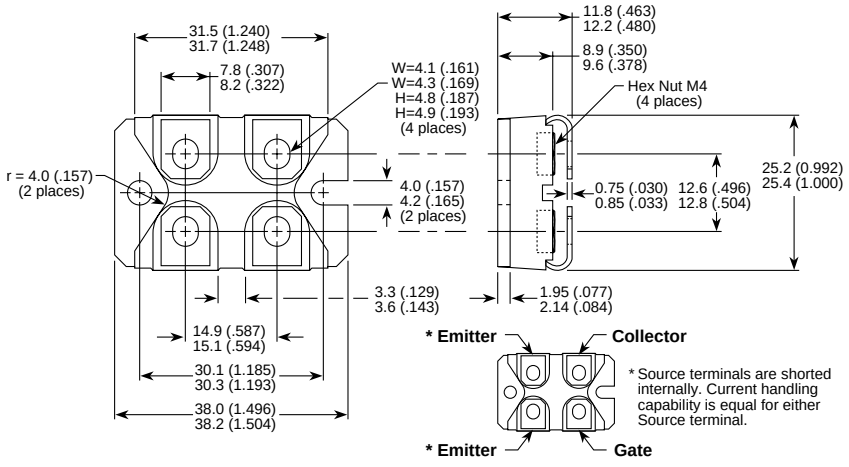
② Pulse Test: Pulse width < 380 µS, Duty Cycle < 2%

③ See MIL-STD-750 Method 3471

④ Starting $T_j$ = +25°C, L = 6.23mH, $R_G$ = 25Ω, Peak $I_L$ = 34A

**APT Reserves the right to change, without notice, the specifications and information contained herein.**

### SOT-227 (ISOTOP®) Package Outline




Dimensions in Millimeters and (Inches)

APT's devices are covered by one or more of the following U.S.patents: 4,895,810 5,045,903 5,089,434 5,182,234 5,019,522 5,262,336 5,256,583 4,748,103 5,283,202 5,231,474 5,434,095 5,528,058